

Amendment After Final
Serial No. 09/996,004

Docket No. US010611

IN THE CLAIMS:

Kindly replace the claims of record with the following full set of claims:

1.- 6. (Cancelled)

7. (Currently amended) A method for improving the decoding efficiency of an encoded data video signal employing an MPEG digital video decoder having a variable length code (VLD) decoder, an inverse quantizer (IQ), an inverse discrete cosine transformer (IDCT), a motion compensator (MC), and a complexity selector, the method comprising the steps of:

receiving a compressed video data stream having a motion vector associated therewith at said VLD and producing decoded data therefrom;

determining the type of motion vectors from said decoded data as being one selected from the group consisting of: a quarter-pel motion vector, a half-pel motion vector, and a fractional-pel motion vector;

converting the motion vector to a full motion vector;

dequantizing said decoded data using said IQ to generate dequantized, decoded data;

employing said IDCT for transforming said dequantized, decoded data from a frequency domain to a spatial domain to produce difference data;

employing said MC for performing a full-pel motion compensation on every macroblock regardless of the types of motion vectors to generate a reference data; and,

combining said reference data and said difference data to produce motion compensated pictures.

Amendment After Final
Serial No. 09/996,004

Docket No. US010611

8. (Cancelled)

9. (Cancelled).

10. (Currently amended) The method of claim [[9]] 7, wherein the step of converting the motion vector to said full-pel vector further comprises the step of: rounding an odd number vector to the nearest even number vector.

11. (Original) The method of claim 10, wherein the step of converting the motion vector to said full-pel motion vector is performed on one of P frame, B frame, and a combination of P and B frames.

12. (Currently amended) A programmable video decoding system, comprising:

a variable length decoder (VLD) configured to receive and decode a stream of MPEG video signals with a motion vector associated therewith, said VLD being operative to output quantized data from said decoded MPEG video signals;

a complexity selector configured to detect a motion vector type as being one selected from the group consisting of: a quarter-pel motion vector, a half-pel motion vector, and a fractional-pel motion vector from said decoded MPEG video signals and to convert said detected motion vector to a full-pel motion vector;

an inverse quantizer (IQ) coupled to receive the output of said VLD to operatively inverse quantize the quantized data received therein;

Amendment After Final
Serial No. 09/996,004

Docket No. US010611

an inverse discrete cosine transformer (IDCT) coupled to the output of said IQ for transforming the dequantized data from a frequency domain to a spatial domain;

a motion compensator (MC) coupled to the output of said complexity selector for performing a full-pel motion compensation regardless of the types of motion vectors; and,

an adder for receiving output signals from said MC and said IDCT to form motion compensated pictures.

13. (Cancelled)

14. (Original) The system of claim 12, wherein said complexity selector converts the motion vector to said full-pel vector by rounding an odd number vector to the nearest even number vector.

15. (Previously amended) The system of claim 12, wherein said complexity selector converts the motion vector to said full-pel vector on one of P frame, B frame, and a combination of P and B frames received therein.